Page

Enzyme alterable alkylating agents. VI. Synthesis, chemical properties, toxicities, and clinical trial of haloacetates and haloacetamides containing enzyme-susceptible bonds. S. P. KRAMER, L. E. GOODMAN, H. DORFMAN, R. SOLOMON, A. M. RUTENBURG, E. PINEDA, L. L. NASON, A. ULFOHN, S. D. GABY, D. BAKAL, C. E. WILLIAMSON, J. I. MILLER, S. SASS, B. WITTEN, and A. M. SELIGMAN 297

Oncolytic potentials of nonhuman viruses for human cancer. I. Effects of twenty-four viruses on human cancer cell lines. WILLIAM MCD. HAMMON, DAVID S. YOHN, BRUCE C. CASTO, and ROBERT W. ATCHISON 329

Relationship between host range and isoantigenic properties in different sublines of the same sarcoma. EVA KLEIN and ERNA MÖLLER 347

Morphology of the oncogenic response of hamsters to polyoma virus infection. MEARL F. STANTON and HISASHI OTSUKA. [Plates 36–48] 365

Cytotoxic assays and other immunologic studies of leukemias induced by Friend virus. BRITTA WAHREN 411

Cysts of the epididymis, cancer of the cervix, granular cell myoblastoma, and other lesions after estrogen injection in newborn mice. THELMA B. DUNN and ARLEIGH W. GREEN. [Plates 49–56] 425

Spontaneous tumors in germ-free rats. MORRIS POLLARD and B. A. TEAH. [Plates 57, 58] 457

Complete inhibition of occurrence of spontaneous hepatomas in highly susceptible (C3H × YBR)F_1 male mice by hypophysectomy. W. E. HESTON 467

Books Received 475

Announcements:

Course in Cancer Chemotherapy 477

Manuscripts Approved for JNCI, June 10 to July 10, 1963 477

No. 3—SEPTEMBER 1963

Response of anoxic C3H mouse mammary carcinoma isotransplants (1–25 mm^3) to X irradiation. HERMAN D. SUIT and ROBERT J. SHALEK. [Plate 59] 479

Response of spontaneous mammary carcinoma of the C3H mouse to X irradiation given under conditions of local tissue anoxia. HERMAN D. SUIT and ROBERT J. SHALEK. [Plate 60] 497

Origin of carcinoma of the bronchus. B. K. S. DIJKSTRA 511

Transplanted tumor growth and liver regeneration in the rat. LEON L. GERSHBEIN 521

Mammary tumors, mammary gland development, and morphology of ovaries in virgin mice of strains C3H, CBA, and their F_1 hybrids. FLAVIA L. RICHARDSON and GEORGIA HALL. [Plates 61, 62] 529

Comparative biochemistry of three transplantable mammary tumors as influenced by steroid therapy. RUSSELL HILF, MINNIE M. JOHNSON, CHARLES BREUER, JAMES J. FREEMAN, and ALECK BORMAN 541

Association of increased dihydrofolate reductase levels and chromosome alteration in amethopterin-resistant sublines of Leukemia L1210. ANTHONY W. SCHRECKER, JOHN M. VENDITTI, NATHANIEL H. GREENBERG, JUNE L. BIEDLER, DENNIS L. ROBINSON, and DORRIS J. HUTCHISON 557

Selection of chromosomal variant in amethopterin-resistant sublines of Leukemia L1210 with increased levels of dihydrofolate reductase. JUNE L. BIEDLER, ANTHONY W. SCHRECKER, and DORRIS J. HUTCHISON. [Plates 63–68] 575

Stability of vitamins in a chemically defined medium for 929-L fibroblasts. JOYCE MOHBERG and MARVIN J. JOHNSON 603

Amino acid utilization by 929-L fibroblasts in chemically defined media. JOYCE MOHBERG and MARVIN J. JOHNSON 611

Page

Comparison of the yields of several selected components in the smoke from different tobacco products. Dietrich Hoffmann, Gunter Rathkamp, and Ernest L. Wynder. [Plate 69]..... 627
Karyotype of the Syrian hamster. John M. Lehman, Ian Macpherson, and Paul S. Moorhead..... 639
Effect of hypophysectomy on the lowering of organ catalase by a transplanted tumor. Miloslav Rechcigl, Jr., and Seymour H. Wollman. [Plate 70]. 651
Toxic effects of steroid hormones on organ cultures of mouse mammary tumors, with a comment on the occurrence of viral inclusion bodies. Evelyn M. Rivera, Joel J. Elias, Howard A. Bern, Nicolay P. Napalkov, and Dorothy R. Pitelka. [Plates 71–73]..... 671
Relationship between tumor growth and radiosensitivity. James A. Belli and J. Robert Andrews..... 689
Virus of avian myeloblastosis (BAI strain A). XXIV. Nucleotide composition of the pentosenucleic acid and comparison with strain R (erythroblastosis). R. A. Bonar, Robert H. Purcell, Dorothy Beard, and J. W. Beard.... 705
Multiplicity of cell response to the BAI strain A (myeloblastosis) avian tumor virus. VII. Elaboration of virus by non-neoplastic hepatic cells. Guy de Thé, Hideo Ishiguro, Dorothy Beard, and J. W. Beard. [Plates 74–76]. 717
Segregation of gold particles in gray bodies of myeloblasts infected with BAI strain A avian tumor virus: preliminary report. Ursula Heine, Caroline Becker, R. A. Bonar, and J. W. Beard. [Plates 77–79]..... 731
Announcements:
American Society for Cell Biology Meeting..... 741
Manuscripts Approved for JNCI, July 10 to August 10, 1963..... 741

No. 4—OCTOBER 1963

Cadmium-induced interstitial cell tumors in rats and mice and their prevention by zinc. Samuel A. Gunn, Thelma Clark Gould, and W. A. D. Anderson. [Plates 80–82]..... 745
Focus formation by Japanese quail cells infected with Rous sarcoma virus. Gustave Freeman. [Plate 83]..... 761
Chromosome studies of a frog renal adenocarcinoma line carried by serial intraocular transplantation. Marie A. Di Berardino, Thomas J. King, and Robert G. McKinnell. [Plates 84–89]..... 769
Function of depressed immunologic reactivity during carcinogenesis. Richmond T. Prehn..... 791
Production and release of virus-like particles by cultures of agent-free ascites cells. George Miroff and Dorothy G. Feldman. [Plates 90–94]..... 807
Cytocidal effect of chloroform-activated serum on ascites tumor cells. Charles A. Apffel..... 827
Anthramine carcinogenesis in the skin of rats. I. The epidermis. Richard L. Dobson. [Plates 95–100]..... 841
Anthramine carcinogenesis in the skin of rats. II. The pilosebaceous apparatus. Richard L. Dobson. [Plates 101–103]..... 861
Histology of some neoplasms and non-neoplastic lesions found in wild mice maintained under laboratory conditions. Thelma B. Dunn and Howard B. Andervont. [Plates 104–111]..... 873
Mixed infection with simian virus 40 and adenovirus 12. Gregory T. O'Conor, Alan S. Rabson, Irene K. Berezesky, and Frances J. Paul. [Plates 112–116]..... 903
Carcinogenic properties of nuts from *Cycas circinalis* L. indigenous to Guam. Gert L. Laqueur, Olaf Mickelsen, Marjorie G. Whiting, and Leonard T. Kurland. [Plates 117–125]..... 919

Page

Transplantation of a murine chondrosarcoma in mice of different inbred strains. RICHARD L. SWARM. [Plates 126–131] 953
Antigenic properties of experimental leukemias. I. Serological studies *in vitro* with spontaneous and radiation-induced leukemias. LLOYD J. OLD, EDWARD A. BOYSE, and ELISABETH STOCKERT 977
Antigenic properties of experimental leukemias. II. Immunological studies *in vivo* with C57BL/6 radiation-induced leukemias. EDWARD A. BOYSE, LLOYD J. OLD, and SILVI LUELL 987
Induction of plasma cell tumors and sarcomas in mice by diffusion chambers placed in the peritoneal cavity. RUTH M. MERWIN and LENA W. REDMON .. 997
Karyotypic and morphologic characterization of a serially transplanted human choriocarcinoma. MICHAEL GALTON, PETER B. GOLDMAN, and SARAH F. HOLT. [Plates 132–136] 1019
Announcements:
National Cancer Institute Monograph No. 12 1037
Manuscripts Approved for JNCI, August 10 to September 10, 1963 1037

No. 5—NOVEMBER 1963

Prolactin in vertebrate function and organization. OSCAR RIDDLE 1039
Fluorescent antibody studies of the viral antigen in a murine leukemia (Rauscher). MARY ALEXANDER FINK and RICHARD A. MALMGREN. [Plates 137, 138] 1111
Sensitivity of normal and neoplastic cells to the damaging action of carcinogenic substances: a review. JURI M. VASILIEV and VITA I. GUELSTEIN. [Plates 139–142] 1123
Smoking habits in lung-cancer proband families and comparable control families. GEORGE K. TOKUHATA 1153
Establishment and characteristics of cell strains from some epithelial tumors of human origin. YA. V. DOBRYNIN. [Plates 143–147] 1173
Chromosome studies of virus-induced rabbit papillomas and derived primary carcinomas. HARRISON MCMICHAEL, JOYCE E. WAGNER, PETER C. NOWELL, and DAVID A. HUNGERFORD. [Plates 148–152] 1197
Culture of malignant tumors of the Syrian hamster. G. E. MOORE, D. MOUNT, G. TARA, and N. SCHWARTZ. [Plates 153–157] 1217
Further studies on karyotypes of a variety of primary and transplanted mouse polyoma tumors. K. E. HELLSTRÖM, I. HELLSTRÖM, and H. O. SJÖGREN. [Plates 158, 159] 1239
Electrophoretic separation of the mouse mammary tumor virus. DAN H. MOORE and MICHAEL J. LYONS. [Plates 160–163] 1255
Antigenic characteristics of three variants of Rous sarcoma virus. P. J. SIMONS and R. M. DOUGHERTY 1275
Biological properties of three variants of Rous sarcoma virus. R. M. DOUGHERTY, P. J. SIMONS, and F. C. CHESTERMAN. [Plates 164–168] 1285
Announcement:
Manuscripts Approved for JNCI, September 10 to October 10, 1963 1309

No. 6—DECEMBER 1963

Studies on human leukemia. I. Spontaneous lymphoblastoid transformation of fibroblastic bone marrow cultures derived from leukemic and nonleukemic children. MATILDA BENYESH-MELNICK, DONALD J. FERNBACH, and RAYMOND T. LEWIS. [Plates 169–171] 1311
Neoplasms in children treated with X rays for thymic enlargement. I. Neoplasms and mortality. JAMES W. PIFER, EDWARD T. TOYOOKA, ROBERT W. MURRAY, WENDELL R. AMES, and LOUIS H. HEMPELMANN 1333

Page

Neoplasms in children treated with X rays for thymic enlargement. II. Tumor incidence as a function of radiation factors. EDWARD T. TOYOOKA, JAMES W. PIFER, S. LEE CRUMP, ARTHUR M. DUTTON, and LOUIS H. HEMPELMANN. [Plate 172] 1357

Neoplasms in children treated with X rays for thymic enlargement. III. Clinical description of cases. EDWARD T. TOYOOKA, JAMES W. PIFER, and LOUIS H. HEMPELMANN 1379

Morphologic and biologic correlation of lesions obtained in hepatic carcinogenesis in A × C rats given 0.025 percent *N*-2-fluorenyldiacetamide. MELVIN D. REUBER and HARLAN I. FIRMINGER. [Plates 173–178] 1407

Relationship of size of blood sample to yield of "positive" patients in studies of circulating tumor cells. JOAN M. GURIAN and JOHN T. WEST 1431

Mouse-skin painting with smoke condensates from cigarettes made of pipe, cigar, and cigarette tobaccos. F. HOMBURGER, A. TREGER, and J. R. BAKER 1445

Reversal of the thymus-dependent influence in radiation leukemogenesis of C57BL mice. L. W. LAW, T. R. BRADLEY, and SAM ROSE. [Plates 179–183]. 1461

Clearance of blood radioiodide by transplantable tumors of the thyroid gland in the unanesthetized rat. SEYMOUR H. WOLLMAN and FRANKLIN E. REED .. 1479

Neoplastic nature of liver "blood cysts" induced by urethan in mice. NATHAN TRAININ. [Plates 184–186] 1489

Alkaline phosphatase activity and chromosome variation in human cells in culture. L. DE CARLI, J. J. MAIO, and F. NUZZO. [Plate 187] 1501

Resistance levels of polyoma tumors and tumors of other origin to the cytopathogenic effect of polyoma virus. I. HELLSTRÖM 1511

Correlation between the sensitivity of polyoma-induced mouse tumors to polyoma and vaccinia virus *in vitro*. I. HELLSTRÖM and K. E. HELLSTRÖM .. 1525

Viral susceptibility and embryonic differentiation. III. Correlation between an inductive tissue interaction and the onset of viral resistance. TAPANI VAINIO, LAURI SAXÉN, and SULO TOIVONEN. [Plates 188–192] 1533

Search for virus in human leukemia: effects of nucleic acids extracted from leukemic tissues on cell cultures. ROBERT M. MCALLISTER and G. DENMAN HAMMOND 1549

Duration of DNA synthesis in Ehrlich ascites cells as estimated by double-labeling with C^{14}- and H^3-thymidine and autoradiography. RENATO BASERGA and ELIZABETH LISCO 1559

Acknowledgment 1573

Index of authors 1577

Index of subjects 1581

Announcements:

Symposium on Cellular Radiation Biology 1591

Manuscripts Approved for JNCI, October 10 to November 10, 1963 1591